SEQUENCE LISTING

<110>   NOAB BIODISCOVERIES
        SHIPMAN, Rob
        LEE, David

<120>   MATERIALS AND METHODS FOR ANALYSIS OF ATP-BINDING CASSETTE
        TRANSPORTER GENE EXPRESSION

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<130>   13516-2

<150>   US 60/529,082
<151>   2003-12-15

<160>   141

<170>   PatentIn version 3.3

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atgctcacga gttcatcacc agtttccccg agggctacaa cacggtcgtc ggtgaacggg    180

gcactaccct gtctggggg cagaagcagc gcctggccat cgcccgagcc cttatcaagc    240

agcccacggt gctgatactg gatgaagcta ccagcgcgct ggatgcagag tccgagcggg    300

ttgtacagga ggccctggac cgggccagtg caggccgcac ggtgctggta attgcccacc    360

ggctcagcac tgtccgtggg gcccactgca ttgtcgtcat ggccgatggc cgtgtctggg    420

aggctgggac acatgaagag ctcctgaaga aaggcgggct atacgccgag ctcatccgga    480

ggcaggccct ggatgccccg aggacagcgg ccccaccgcc caaaaagcca gaaggcccca    540

ggagccacca gcacaagtcc tgagaagggc cccctgaggt gtggtcgctg ccaagcatca    600

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<210>   19
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<213>   Homo sapiens

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gctgcctttt taaacctagg tcttaccagg gtttttactg tttggtttga ggcaccccag    180

tcaactccta gatttcaaaa accttttct aattgggagt aatggcgggc actttcacca    240

agatgttcta gaaacttctg agccaggagt gaatggccct tccttagtag cctgggggat    300

gtccagagac taggcctctc ccctttaccc ctccagagaa ggggcttccc tgtcccggag    360

ggacacgggg aacgggattt tccgtctctc cctcttgcca gctctgtgag tctggccagg    420

gcgggtaggg agcgtggagg gcatctgtct gccatcgccc gctgccaatc taagccagtc    480

tcactgtgaa ccacacgaaa cctcaactgg gggagtgagg ggctggccag gtctggaggg    540
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gcctcagggg tgcccagccc ggcacccagc gctttcgccc ctcgtccacc cacccctggc   600

tggcagcctc cctccccaca cccgcccctg tgctctgctg tctggaggcc acgtggatgt   660

tcatgagatg cattctcttc tgtctttggt ggatgggatg gtggca   706

<210>   20
<211>   538
<212>   DNA
<213>   Homo sapiens

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tattttataa tacttttgga atttcattaa taaggctaaa atttgaggaa tataactaat   180

tttcagcctt aagacattta agtttggaag tccttgctat tcaacagaat aacaagaaaa   240

cttcagaatg tatcactctc ctgaaaagaa gatattaata agccctttta tttatggtta   300

tagtttattt tatagtctca aaattcctaa agcaatgcta caaccattga atttgccata   360

ttttgtatca gtgctgttaa tttgctgttg cctcaagaaa aagtgctttt tctccatgga   420

tgaggctaga ccctaagaag taattaagtc aatgtaaatc aaatggaagt tttcccatga   480

actaagaatt tattagttcc ctgattagac tggaagaaga aaccactatt tcatgaaa   538

<210>   21
<211>   753
<212>   DNA
<213>   Homo sapiens

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aggggtggt gattgaaaag gggacccatg aagaactgat ggcccaaaaa ggagcctact   120

acaaactagt caccactgga tcccccatca gttgacccaa tgcaagaatc tcagacacac   180

atgacgcacc agttacaggg gttgttttta agaaaaaaa caatcccagc aggagggatt   240

gctgggattg ttttttcttt aaagaagaat gttaatattt tacttttaca gtcattttcc   300

tacatcggaa tccaagctaa tttctaatgg ccttccataa taattctgct ttagatgtgt   360

atacagaaaa tgaaagaaac tagggtccat atgagggaaa acccaatgtc aagtggcagc   420

tcagccacca ctcagtgctt ctctgtgcag gagccagtcc tgattaatat gtgggaatta   480

gtgagacatc agggagtaag tgacactttg aactcctcaa gggcagagaa ctgtctttca   540

ttttgaacc ctcggtgtac acagaggcgg gtctataaca ggcaatcaac aaacgtttct   600

tgagctagac caaggtcaga tttgaaaaga acagaaggac tgaagaccag ctgtgtttct   660

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taactaaatt tgtctttcaa gtgaaaccag cttccttcat ctctaaggct aaggataggg    720

aaagggtgga tgctctcagg ctgagggagg cag                                  753



<210>   22
<211>   660
<212>   DNA
<213>   Homo sapiens

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ctgcagtttt gtggttgagg ggcctggaga aaatcatttt ctccccttgg cagtgtccca    120

gggccctgga tggtcctctt accaacatct ggtcttccag gcactcaaaa gctgggaacc    180

agcatctcag cgccagctct accagttctc gttttgggcc agaggcagcc tctgcactcc    240

cacgcctgtc ctcctggaag ggacctggtt ggactaacgg ctaacctgga cctggaactg    300

tagggccagg ggattgtctc agggccgacg ttccacctgg ggcttccctc cccacccacc    360

ccgactccag gctttccctt ttttcttttg ttcaacattg taagaacaat caatgctgtt    420

attactgatc ccaccatgat tgatgtgggg taaatattaa ggagatggcc tcatgggaat    480

ttgaccttga ctagaaatag agactgagag tgagcaacca gctggaaggt actatgccag    540

tcctagcaga aaaatgtgtt aggggcctgg cccaaagcag tgttggttgc ttacagtgtt    600

gattgatttt gttctttttt cttaccacct cttttctttc cctctçatgg tacctgctca    660



<210>   23
<211>   810
<212>   DNA
<213>   Homo sapiens

<400>   23
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actgcctctt cagaatctta gaggctgccg gtggtcagat tatcattgat ggagtagata    120

ttgcttccat tgggctccac gacctccgag agaagctgac catcatcccc caggacccca    180

tcctgttctc tggaagcctg aggatgaatc tcgacccttt caacaactac tcagatgagg    240

agatttggaa ggccttggag ctggctcacc tcaagtcttt tgtggccagc ctgcaacttg    300

ggttatccca cgaagtgaca gaggctggtg caacctgag cataggccag aggcagctgc    360

tgtgcctggg cagggctctg cttcggaaat ccaagatcct ggtcctggat gaggccactg    420

ctgcggtgga tctagagaca gacaacctca ttcagacgac catccaaaac gagttcgccc    480

actgcacagt gatcaccatc gcccacaggc tgcacaccat catggacagt gacaaggtaa    540

tggtcctaga caacgggaag attatagagt gcggcagccc tgaagaactg ctacaaatcc    600

ctggaccctt ttactttatg gctaaggaag ctggcattga gaatgtgaac agcacaaaat    660
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tctagcagaa ggccccatgg gttagaaaag gactataaga ataatttctt atttaatttt    720

attttttata aaatacagaa tacatacaaa agtgtgtata aaatgtacgt tttaaaaaag    780

gataagtgaa cacccatgaa cctactaccc                                     810
```

```
<210>    24
<211>    722
<212>    DNA
<213>    Homo sapiens

<400>    24
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cctcatccag gctaccatcc gcacccagtt tgatacctgc actgtcctga ccatcgcaca    120

ccggcttaac actatcatgg actacaccag ggtcctggtc ctggacaaag gagtagtagc    180

tgaatttgat tctccagcca acctcattgc agctagaggc atcttctacg ggatggccag    240

agatgctgga cttgcctaaa atatattcct gagatttcct cctggccttt cctggttttc    300

atcaggaagg aaatgacacc aaatatgtcc gcagaatgga cttgatagca aacactgggg    360

gcaccttaag attttgcacc tgtaaagtgc cttacagggt aactgtgctg aatgctttag    420

atgaggaaat gatccccaag tggtgaatga cacgcctaag gtcacagcta gtttgagcca    480

gttagactag tcccccggtc tcccgattcc caactgagtg ttatttgcac actgcactgt    540

tttcaaataa cgattttatg aaatgacctc tgtcctccct ctgatttttc atattttcct    600

aaagtttcgt ttctgttttt taataaaaag cttttтcctc ctggaacaga agacagctgc    660

tgggtcaggc cacccctagg aactcagtcc tgtactctgg ggtgctgcct gaatccatta    720

aa                                                                   722
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<211>    794
<212>    DNA
<213>    Homo sapiens

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ccgaaggtaa aatttggatt gataagatct tgacaactga aattggactt cacgatttaa    120

ggaagaaaat gtcaatcata cctcaggaac ctgttttgtt cactggaaca atgaggaaaa    180

acctggatcc ctttaaggag cacacggatg aggaactgtg gaatgcctta caagaggtac    240

aacttaaaga aaccattgaa gatcttcctg gtaaaatgga tactgaatta gcagaatcag    300

gatccaattt tagtgttgga caaagacaac tggtgtgcct tgccagggca attctcagga    360

aaaatcagat attgattatt gatgaagcga cggcaaatgt ggatccaaga actgatgagt    420
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14/44

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taatacaaaa aaaaatccgg gagaaatttg cccactgcac cgtgctaacc attgcacaca        480

gattgaacac cattattgac agcgacaaga taatggtttt agattcagga agactgaaag        540

aatatgatga gccgtatgtt ttgctgcaaa ataaagagag cctattttac aagatggtgc        600

aacaactggg caaggcagaa gccgctgccc tcactgaaac agcaaaacag gtatacttca        660

aaagaaatta tccacatatt ggtcacactg accacatggt tacaaacact tccaatggac        720

agccctcgac cttaactatt ttcgagacag cactgtgaat ccaaccaaaa tgtcaagtcc        780

gttccgaagg catt                                                         794
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<210>    26
<211>    646
<212>    DNA
<213>    Homo sapiens

<400>    26
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cgctccaggg gtggctggag acgggtgggc ggctggagac catgcagagc gccgtgagtt        120

ctcagggctc ctgccttctg tcctggtgtc acttactgtt tctgtcagga gagcagcggg        180

gcgaagccca ggcccctttt cactccctcc atcaagaatg gggatcacag agacattcct        240

ccgagccggg gagtttcttt cctgccttct tctttttgct gttgtttcta aacaagaatc        300

agtctatcca cagagagtcc cactgcctca ggttcctatg gctggccact gcacagagct        360

ctccagctcc aagacctgtt ggttccaagc cctggagcca actgctgctt tttgaggtgg        420

cactttttca tttgcctatt cccacacctc cacagttcag tggcagggct caggatttcg        480

tgggtctgtt ttcctttctc accgcagtcg tcgcacagtc tctctctctc tctcccctca        540

aagtctgcaa ctttaagcag ctcttgctaa tcagtgtctc acactggcgt agaagttttt        600

gtactgtaaa gagacctacc tcaggttgct ggttgctgtg tggttt                      646
```

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<210>    27
<211>    747
<212>    DNA
<213>    Homo sapiens

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tgcccacatg tgcagctcag cccccctggc ctcagggcgg gcagatcgag ttccgggact        120

ttgggctaag ataccgacct gagctcccgc tggctgtgca gggcgtgtcc ttcaagatcc        180

acgcaggaga gaaggtgggc atcgttggca ggaccggggc agggaagtcc tccctggcca        240

gtgggctgct gcggctccag gaggcagctg aggtggggat ctggatcgac ggggtcccca        300

ttgcccacgt ggggctgcac acactgcgct ccaggatcag catcatcccc caggacccca        360
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tcctgttccc tggctctctg cggatgaacc tcgacctgct gcaggagcac tcggacgagg    420

ctatctgggc agccctggag acggtgcagc tcaaagcctt ggtggccagc ctgcccggcc    480

agctgcagta caagtgtgct gaccgaggcg aggacctgag cgtgggccag aaacagctcc    540

tgtgtctggc acgtgccctt ctccggaaga cccagatcct catcctggac gaggctactg    600

ctgccgtgga ccctggcacg gagctgcaga tgcaggccat gctcgggagc tggtttgcac    660

agtgcactgt gctgctcatt gcccaccgcc tgcgctccgt gatggactgt gcccgggttc    720

tggtcatgga caaggggcag gtggcag                                         747
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<210>    28
<211>    748
<212>    DNA
<213>    Homo sapiens

<400>    28
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gcaaattgtc acaggacagc ccttctttcc acagaagctc caggtagagg gtgtgtaagt    180

agataggcca tgggcactgt gggtagacac acatgaagtc caagcattta gatgtatagg    240

ttgatggtgg tatgtttttca ggctagatgt atgtacttca tgctgtctac actaagagag    300

aatgagagac acactgaaga agcaccaatc atgaattagt tttatatgct tctgttttat    360

aattttgtga agcaaaattt tttctctagg aaatatttat tttaataatg tttcaaacat    420

atattacaat gctgtatttt aaaagaatga ttatgaatta catttgtata aaataatttt    480

tatatttgaa atattgactt tttatggcac tagtattttt atgaaatatt atgttaaaac    540

tgggacaggg gagaacctag ggtgatatta accaggggcc atgaatcacc ttttggtctg    600

gagggaagcc ttggggctga tcgagttgtt gcccacagct gtatgattcc cagccagaca    660

cagcctctta gatgcagttc tgaagaagat ggtaccacca gtctgactgt ttccatcaag    720

ggtacactgc cttctcaact ccaaactg                                       748
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<210>    29
<211>    805
<212>    DNA
<213>    Homo sapiens

<400>    29
aaaccgaggc agagagctac gaggggctcc tggcaccatc gctgatccca agaactggc     60

cagaccaagg gaagatccag atccagaacc tgagcgtgcg ctacgacagc tccctgaagc     120

cggtgctgaa gcacgtcaat gccctcatct cccctggaca gaagatcggg atctgcggcc     180
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gcaccggcag tgggaagtcc tccttctctc ttgccttctt ccgcatggtg gacacgttcg      240

aagggcacat catcattgat ggcattgaca tccgcaaact gccgctgcac accctgccgt      300

cacgcctctc catcatcctg caggaccccg tcctcttcag cggcaccatc cgatttaacc      360

tggaccctga gaggaagtgc tcagatagca cactgtggga ggccctggaa atcgcccagc      420

tgaagctggt ggtgaaggca ctgccaggag gcctcgatgc catcatcaca gaaggcgggg      480

agaatttcag ccagggacag aggcagctgt tctgcctggc ccgggccttc gtgaggaaga      540

ccagcatctt catcatggac gaggccacgg cttccattga catggccacg gaaaacatcc      600

tccaaaaggt ggtgatgaca gccttcgcag accgcactgt ggtcaccatc gcgcatcgag      660

tgcacaccat cctgagtgca gacctggtga tcgtcctgaa gcggggtgcc atccttgagt      720

tcgataagcc agagaagctg ctcagccgga aggacagcgt cttcgcctcc ttcgtccgtg      780

cagacaagtg acctgccaga gccca                                           805
```

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<210>   30
<211>   782
<212>   DNA
<213>   Homo sapiens

<400>   30
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caatggatcc ttctcaagtt ccagaacatt ggccacaaga aggggagatc aagatacatg      120

atctgtgtgt cagatatgaa aataatctga aacctgttct taagcacgtc aaggcttaca      180

tcaaacctgg acaaaaggtg ggcatatgtg gtcgcactgg cagtgggaaa tcatcgttat      240

ctctggcttt cttcagaatg gttgatatat ttgatggaaa aattgtcatt gatgggatag      300

acatttccaa attaccactg cacacactac gttctagact ttcaatcatt ctgcaggatc      360

caatactatt cagtggttcc attagattta atttagatcc agagtgcaaa tgcacagatg      420

acagactctg ggaagcctta gaaattgctc agctgaagaa tatggtcaaa tctctacctg      480

gaggtctaga tgcggttgtc actgaaggtg gggagaattt tagcgtggga cagagacagc      540

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cagcttccat tgacatggcc acagagaata ttttgcaaaa agtagtaatg acagcctttg      660

cagaccggac cgtggtgaca atggctcacc gtgtctcttc tattatggat gcaggccttg      720

ttttagtctt ttctgagggt attttagtgg agtgtgatac tgtcccaaat ttgttcgccc      780

ac                                                                     782
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<210>   31
<211>   892
<212>   DNA
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<213> Homo sapiens

<400> 31
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gacggcgtgg acaccagcca gctggagctg gcccagctca gatcccagtt ggctatcatc     120

ccccaggagc ccttttttgtt cagtgggact gttcgggaaa acctggaccc ccagggccta     180

cataaggaca gggccttgtg gcaggccctg aagcagtgcc acctgagtga ggtgattaca     240

tccatgggtg gtctggatgg tgagctgggt gagggggggcc ggagcttatc tcttgggcag     300

aggcagctgt tgtgtttggc cagggctctc ctcacagatg ccaagatcct gtgtatcgat     360

gaggccacag caagtgtgga ccagaagaca gaccagctgc tccagcagac catctgcaaa     420

cgctttgcca acaagacagt gctgaccatt gcccataggc tcaacacgat cctgaactca     480

gaccgggtgc tggtgctaca agcgggggaga gtggtagagc tggactcccc ggccaccctg     540

cgcaaccagc cccactccct gttccagcag ctgctgcaga gcagccagca gggagtccct     600

gcctcactcg gaggtccctg agcccaatcc cacaccctgc agagttctcc cctctctctg     660

atccaggccg ggcctataca gaggtgctgg ctgcttgttt acattctcct ctggggctct     720

acctctccac acttccccag aagggaaaag ggcaccctgg attactcttt ggaaatcact     780

ccttggtggg cagcatcctg aggcttcccc agaaccaggc ctctgctctg ccctcttgc     840

atctggaacg ccaggtgggt ttttctggca taggagcccca cttgcatttt ca           892
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<210> 32
<211> 764
<212> DNA
<213> Homo sapiens

<400> 32
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ctcagtgatc cctcaagatc cagtgctgct ctcaggaacc atcagattca acctagatcc     120

ctttgaccgt cacactgacc agcagatctg ggatgccttg gagaggacat tcctgaccaa     180

ggccatctca aagttcccca aaaagctgca tacagatgtg gtggaaaacg gtggaaactt     240

ctctgtgggg gagaggcagc tgctctgcat tgccagggct gtgcttcgca actccaagat     300

catccttatc gatgaagcca cagcctccat tgacatggag acagacaccc tgatccagcg     360

cacaatccgt gaagccttcc agggctgcac cgtgctcgtc attgcccacc gtgtcaccac     420

tgtgctgaac tgtgaccaca tcctggttat gggcaatggg aaggtggtag aatttgatcg     480

gccggaggta ctgcggaaga gcctgggtc attgttcgca gccctcatgg ccacagccac     540

ttcttcactg agataaggag atgtggagac ttcatggagg ctggcagctg agctcagagg     600

ttcacacagg tgcagcttcg aggcccacag tctgcgacct tcttgtttgg agatgagaac     660
```

```
ttctcctgga agcaggggta aatgtagggg gggtggggat tgctggatgg aaaccctgga    720

ataggctact tgatggctct caagacctta gaaccccaga acca               764
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<210>  33
<211>  790
<212>  DNA
<213>  Homo sapiens

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ccagattctg catttgcgat gttactagca gcagaagtca gattgtagag gtcctggcgg    120

ctgattctag aggaggaaga ggctctgtga gatgaatagg aggagtcttc aggaggaggg    180

gctgtcctct ccgcaggcag ccctggtctt cagcccctcc catccacgga gtgagctggg    240

gctgaagttg tccccactgc catactcagt ccatgtcacc ccacttggtg ggcttggggt    300

tggttctggg tggtgaaccg gggcagaccc agctaatgga ttaaaaaact gcccttcacc    360

tcccaaatcc ccaagggttc ctcatgtgtt ttcaccaaaa ccaccccagt gcctgagatt    420

gaaaatattg taactttcag ttagaaatca gccacaataa acaacatggg aaaatgcctt    480

aggatggagt ttgcaaggtt tccttgccca ttatcagaag gaaaagagc agaattttct    540

tctcgtttaa ccccactcac ttccatcttg actgggtgac aagtggtaat gacacagatt    600

tgtagcgtga aagactgaat acagtgtttg gccaaaaatt tttttaaaaa tcatattata    660

tgtttcaatt gatctgttag aataaccaag aaaacaaaat gctggagttt ctctataaat    720

gacactttta tatcttcttt attcgtcgtt aaaacgcggt aggaaattac cctgaaatgt    780

cgccttgcaa                                                  790
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<210>  34
<211>  787
<212>  DNA
<213>  Homo sapiens

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atttgataaa acacataatt ttgagaaaaa taaagtttta aatgtatcta tgtctcgact    120

tttctgatga agttatacca gaaaagttaa ttatttgatg ggcctgccat gtgaaaacca    180

gaaaataacc tcgtactcac aagccagtgg aagggattcc tgatttact aaaaaaaaaa    240

aaaaaaaag agagggcggg gacaaatatc aaattaagca agtaaagaaa agaacaggt    300

aagagtgtgt gtgtgtgtgt aacactttga caatactaaa ctctcataag catttaacac    360

ttcagatgtt taacatttct gcccctttct caatttttat gacgtgcagg caaattatca    420
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ttttctgtga acacagctca gattttggct ggaatggcta tggctatgca gtggcacttc    480

ttgttgtagt cttttttgcaa actctgattc ttcagcaata tcaacgtttt aacatgctca    540

cctcagcaaa agttaagaca gctgtaaatg gactgatcta caaaaaggcc ttactttat     600

caaatgtttc tcgacaaaag ttttccactg gggaaattat taacttgatg tcagcaactc    660

atggacttga cagcaaacct caatctcctc tggtctgccc cttttcaaat cctaatggcc    720

gtatatctcc tttggcaaga gctgggtcca gcagtgttag caggggtggc agtccttgtg    780

tttgtta                                                              787
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<210>  35
<211>  488
<212>  DNA
<213>  Homo sapiens

<400>  35
ttccctcctc gtcagtctct caaagacccc atggtccatc ccctgagggt ggtcagccaa    60

ggctcccgtt ccgtgggatg ccataaaagc cgcccagtgg gacccacagt cacacagagc    120

gcctcacctg catcctctcc cccacaagag ccccaaagat cccacgggag aggggagagg    180

gacgcacagc actgcctgcc aagcgagaat gcaggccccg cccctcggc ccctcaccac     240

ctctttctac agcctaattt attggattcc ctattcgtag ccatctccgt ggccaatgtg    300

actaccgtgc cagcagcggg ggcggcccag cctctgagtc ccgtgggggcc ccggctccca    360

ccggtgccaa acccagcccc tgcggccgtc accccgccag cctacactgc cagccgccac    420

cggggcacac gggcctctgc ttgccagcca ggagtgcgga caccatgttc ccagctcagt    480

gccaaaga                                                             488
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<210>  36
<211>  617
<212>  DNA
<213>  Homo sapiens

<400>  36
gtggccaact aaacctgtac aaaatagctg acagttttat aactaatttc aatataaaaa    60

ttgttttaat ggcatttgtt gaaagaaaaa agcatggcta aaatgtatca aatgccatat    120

ttttaaattt tggactttaa gcatcttaat gagggcatat aacaaattaa ttttagtaca    180

atcttaaata tttttaataa atcctttcat tttaaaaga gaattgccaa tacagaaaag     240

gagtatccaa acaatgtctc aacctgataa tttccttagc agaattacct attgcaactt    300

ctgttcagaa atacacagct tgtttttttg cccaaggatg agtctacatt ttaagaactg    360

caatggtata aaggaactta aggattctga gaatcatagt aataacatac attggaatag    420

tactttataa tttacaatcc ccatttacat catttcacct taatgttgag gacaatgttt    480
```

```
tgaaacaaat actattttc ctactttgct tttgagaaaa ttgacactca gacttgccct      540

aatcatgcac tttacttaag gaaagatcga gaaatcaaat gaagttctcc tgactctctg      600

gtttagtgct cttttgt                                                     617
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```
<210>   37
<211>   735
<212>   DNA
<213>   Homo sapiens

<400>   37
tactcattcc ttgtgtgtgt cttggagtgc atttgactcc aggaaaagcc attttggttt       60

tccttaacta aatgataaat gtacccctct cagtctgcag tattgagttg tttaaagtat      120

atgtgcagtc ttgcttacaa ggaggggtta ccatgtatca cacctaatct tcccaatgtt      180

tgggatatta aaacacaaag tccttaacat gccaggctca aggtcttata agagttctag      240

attttttaaga gaattagaca aatttgtgtg tgttagaagc ccattcatta gaagtgtggt      300

ggttatttgg tattaaactc caaatgagcc ataggaaggc actacatgaa ataatgcact      360

gagtatgcaa tgctatcact gtctttgact gtgattttat gtttaaaaag tatgttctaa      420

aattattata tatacatggg tgaattatgt ttccgaggca ctgtttatc tctgtgaatc      480

ttgaataact tttttatatt tgggttatga tgtcaaacga tcctaagcga agatgatttc      540

agttcatcaa atcatcatta atgactttat gtattatttg cacagggaga attgaaactg      600

agtataatca ataagctaga tacgaaatca gtttctcaaa ctgagcttca gaaaggggca      660

ttttgtactc ttgttttttgc ataactggtt ttgttttttt gcagaattaa ctataacaat      720

cactggctac cgaag                                                       735
```

```
<210>   38
<211>   673
<212>   DNA
<213>   Homo sapiens

<400>   38
ctccatatgc ttgaagtgct gattacctac aaatgatttc agatcatgtt tgctaaagag       60

aaatctggaa gtgtgagatc tgtaagaaat gaaagaaatg actcttggag tcaagagatc      120

tggaaatctt ttaatcagtt aaattgtgca gcaatagatt tttaacttta actgaccatt      180

taagtttttt aataagtttt ttacaaagaa aagttaaaca ttaaaaagaa ttacagcttt      240

ctgtcttctc tatcatggaa tgattttttt tattgaatct ccagatttgt atttgacagc      300

ttggtgggaa gggaagcaca ctctgctgtt ctggaatctt atgcccaggg ttttttcactt      360

ctccccacat ctccctttcc acttgccagt gttgtgtagt tagaacctga accactaact      420
```

```
tctaggggcc tttggtctgc cctaccttaa cccaaatgaa agtaaatccc tttcccctta          480

gccaaaataa ggttgggttt tctaaaaaaa tagtctatat tagggaacaa caacagcaaa          540

ttagacaaaa cccagaaagc acaaagcatg aggtggagtt actgtgccca aagtcctcac          600

tcagaccagt gccctccag ttcagttgtc tatgtattac cttccttacc ttcataatgt          660

ttgccaggct tct                                                            673
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<210>    39
<211>    756
<212>    DNA
<213>    Homo sapiens

<400>    39
attccccgca aaaaacccct aactttactc tgaactttt  ttgtttttgc attccatgag           60

gttctgtatt cagtcattct ctaggtaatg tcatttttgt acacatatat ttatataatc          120

actgattgag atttaggaaa aagcatttct aaagaatatt tgcttccctt agaactacag          180

actcgaaatc tttaaagatg gtgcctaagc atctatgtat ttttttaag ttccacagat          240

ttttctgttg ggcaggccaa ggattataaa ccacttccct aaaggcaaca ttaatgcaaa          300

agtccccaga tggcaataca agtatcccc  tggtaccaca tatattcatt tgtgagtttg          360

gatatagagc acattatcta aaccattttg tagttccaaa aacccatcta aatttcttga          420

gttcctgaat tttgaacagg attacctgga gcctggagcc actttaagtt gtacttctga          480

ctaaactgga attatgagtg aggaagagtg tttactaaat aaatgactgg ggcaagcaaa          540

attgaggagg aaattagaaa ctgtttgaca aactttaaga gctacttgaa ataacagaag          600

tcttgattaa tatgcaaata atggctagaa agtatggttt aactggaccc tattatgcct          660

tttaaaaata atttcagtaa cccataaata catgttgtaa aaaattcaaa tatacagaat          720

ggaataaaaa aatgatctcc ctttattacc ctccca                                    756
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```
<210>    40
<211>    591
<212>    DNA
<213>    Homo sapiens

<400>    40
ttggaggccc tgggtgaagt catggtcagc cggccccgag agtgaagctt ccttcccag           60

aagtctcccg agagacatat ttgtgtggcc tagaagtcct ctgtggtctc ccctcctctg          120

aagactgcct ctggcctgca gctgacctgg caaccattca ggcacatgaa ggtggagtgt          180

gaccttgatg tgaccgggat cccactctga ttgcatccat ttctctgaaa gacttgtttg          240

ttctgcttct cttcatataa ctgagctggc cttatccttg gcatccccct aaacaaacaa          300

gaggtgacca ccttattgtg aggttccatc cagccaagtt tatgtggcct attgtctcag          360
```

```
gactctcatc actcagaagc ctgcctctga tttaccctac agcttcaggc ccagctgccc          420

cccagtcttt gggtggtgct gttctttctct ggtggattta atgctgactc actggtacaa         480

acagctgttg aagctcagag ctggaggtga gcttctgagg cctttgccat tatccagccc         540

aagatttggt gcctgcagcc tcttgtctgg ttgaggactt ggggcaggaa a                   591
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```
<210>   41
<211>   648
<212>   DNA
<213>   Homo sapiens

<400>   41
tgctacccag agatcaagga gaaggaagaa atgaggaaga tcattgggcg atacggtctc           60

actgggaaac aacaggtgag cccaatccgg aacttgtcag acgggcagaa gtgccgagtg          120

tgtctggcct ggctggcctg gcagaacccc cacatgctct tcctggatga acccaccaat          180

cacctggata tcgagaccat cgacgccctg gcagatgcca tcaatgagtt tgagggtggt          240

atgatgctgg tcagccatga cttcagactc attcagcagg ttgcacagga aatttgggtc          300

tgtgagaagc agacaatcac caagtggcct ggagacatcc tggcttacaa ggagcacctc          360

aagtccaagc tggtggatga ggagccccag ctcaccaaga ggacccacaa cgtgtgcacc          420

ctgacattgg catctctgcc aaggccatga gcatcatgaa ctcgtttgta aacgacgtgt          480

ttgagcagct ggcgtgtgag gctgcccggc tggcccagta ctcgggccgg accaccctga          540

catcccgaga agtccagacg gctgtgcgtc tgctgctgcc tggggagctg gccaagcacg          600

ctgtgtctga gggcaccaag gctgtcacca agtacaccag ctccaagt                       648
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<210>   42
<211>   719
<212>   DNA
<213>   Homo sapiens


<220>
<221>   misc_feature
<222>   (45)..(45)
<223>   n is a, c, g, or t

<220>
<221>   misc_feature
<222>   (251)..(251)
<223>   n is a, c, g, or t

<220>
<221>   misc_feature
<222>   (255)..(255)
<223>   n is a, c, g, or t

<220>
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<221> misc_feature
<222> (504)..(504)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (513)..(513)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (643)..(643)
<223> n is a, c, g, or t

<400> 42
cctaaacgtc agtgcttgtg gaactgctgg cacgcaagtt tcctngggc ggcctgagga   60

ggagtaccgt caccagctgg gtcggtatgg catctccgga gaactggcca tgcgtcctct   120

tgccagcctg tctgggggcc agaagagccg agtggccttt gctcagatga ctattgccct   180

gccccacttc tacattctgg atgaacccac aaaccacctg gacatggaga ccattgaggc   240

tctgggccgt ngctncaaca atttcagggg tggtgtgatt ctggtgtccc acgatgagcg   300

ctttatcagg ctggtgtgcc gggagttgtg ggtatgcgaa ggaggcggcg tcacccgtgt   360

ggaaggagga tttgaccagt accgcgccct cctccaggga acagttccgc cgcgaaggct   420

ttcctctagg gccaccaggc tgaggactcg ccccaggaca tggactggtc tctcagaccc   480

ctgggccacc atgtaggcca ccantcccag gcnttggact tccccccaac ttggggacag   540

ccttattccc aaatgtctct atccttttga ctggagcatc ttctgcacaa ccttgggagc   600

ccatccaagg gttggtgagg actggtctcc cgggggtggg ggnttggggg gtacctctgg   660

ggttatagat tcccccactg ccccagctct gactggaccc caagtggctg ctatgtaaa   719

<210> 43
<211> 602
<212> DNA
<213> Homo sapiens

<400> 43
cgtctagaat cgaggaggca agcctgtgcc cgaccgacga cacagagact cttctgatcc   60

aacccctaga accgcgttgg gtttgtgggt gtctcgtgct cagccactct gcccagctgg   120

gttggatctt ctctccattc ccctttctag ctttaactag gaagatgtag gcagattggt   180

ggttttttttt tttttttaa catacagaat tttaaatacc acaactgggg cagaatttaa   240

agctgcaaca cagctggtga tgagaggctt cctcagtcca gtcgctcctt agcaccaggc   300

accgtgggtc ctggatgggg aactgcaagc agcctctcag ctgatggctg cacagtcaga   360

tgtctggtgg cagagagtcc gagcatggag cgattccatt ttatgactgt tgttttttcac   420

attttcatct ttctaaggtg tgtctctttt ccaatgagaa gtcattttttg caagccaaaa   480

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gtcgatcaat cgcattcatt ttaagaaatt ataccttttt agtacttgct gaagaatgat      540

tcagggtaaa tcacatactt tgtttagaga ggcgaggggt ttaacccgag tcacccagct      600

gg                                                                      602
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<210>   44
<211>   624
<212>   DNA
<213>   Homo sapiens

<400>   44
cagtacttca gcattccacg atatggattt acggctttgc agcataatga atttttggga       60

caaaacttct gcccaggact caatgcaaca ggaaacaatc cttgtaacta tgcaacatgt      120

actggcgaag aatatttggt aaagcagggc atcgatctct caccctgggg cttgtggaag      180

aatcacgtgg ccttggcttg tatgattgtt attttcctca caattgccta cctgaaattg      240

ttatttctta aaaatattc ttaaatttcc ccttaattca gtatgattta tcctcacata      300

aaaaagaagc actttgattg aagtattcaa tcaagttttt ttgttgtttt ctgttccctt      360

gccatcacac tgttgcacag cagcaattgt tttaaagaga tacattttta gaaatcacaa      420

caaactgaat taaacatgaa agaacccaag acatcatgta tcgcatatta gttaatctcc      480

tcagacagta accatgggga agaaatctgg tctaatttat taatctaaaa aaggagaatt      540

gaattctgga aactcctgac aagttattac tgtctctggc atttgtttcc tcatctttaa      600

aatgaatagg taggttagta gccc                                             624
```

```
<210>   45
<211>   585
<212>   DNA
<213>   Homo sapiens

<400>   45
acaggcacat acatgagaac aggccatctc agccctacac acttgccatc ccctacagca       60

cagaggaaga gtgatggtgg catgctggtg gtggcgggtg ctggtgggag gacagtgcca      120

acctcctcct ggggatccca tgttggagac tctaaggata aggctggtgc tgcccagggt      180

gtctacagga actgcaggtg tctacccccа agtcttccct cctcccaagc caggggtggc      240

acaggcact agatccctgg agttcaggaa ccaacacaag cacaaccacg ggcataagtt      300

ggccttggcc actgccaccc acggccctcc ttttgtgctc catgctggca tcttcactcc      360

cctacccctt ccccagccac tgctgctcat tcaaacttct gtccatgtcc ctccactgtt      420

cctatcagca ggtggcccct gggcatcaga acagcctgcc ctgggcacca ggtggcagac      480

acactcagag catgtctggc tttcctggtg ggtccaggct cattctgctt ctgatttccc      540
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ctcccccagg gctcattttc ccccttttttc ctgtacacat ccctg   585

<210>   46
<211>   637
<212>   DNA
<213>   Homo sapiens

<400>   46
gcccaggtgc aacatctaga ttcacaatga actttctgat tttgtattca tttattccag   60

ctcttgtcat cctaggaata gttgtttttca aaataaggga tcatctcatt agcaggtagt   120

gaaagccatg gctgggaaaa tggaagtgaa gctgccgact gtgcatgact gctctgaacg   180

tctgaaatga gagtgccatg tatttcttttc ttgacaggac atctcaagtc ttttaaccat   240

taagactcca tttgtgcctc ttggatccaa gcaggccttg aatgcaatgg aagtggttta   300

tagtcccttg ctcttacaac ttgcagggac atgtggttat ttggaaattg tgactgagcg   360

gacccaagaa tgtaaataat attcataaac ctatgggaga ctcgtgtgac tattttttttt   420

ccttgttcta ggcacagaaa aaaataggtc agcttaaaaa tatgtttaca ttggataaag   480

gattaggcaa aaataaaatg tttcaaggat tcctgaccat aagtgacaga gaaagagagt   540

tgtgggtttta gatgaagcaa ggttatcatg cagaattggg taagaatgct tctgttcctg   600

gaagacccag agttaaatgc agatgtccac acgaggg   637

<210>   47
<211>   698
<212>   DNA
<213>   Homo sapiens

<400>   47
tcaatgacca tcggcttcct ctattttggc catgggagca tccagctctc cttcatggat   60

acagccgccc tcttgttcat gatcggtgct ctcatcccctt tcaacgtcat tctggatgtc   120

atctccaaat gttactcaga gagggcaatg ctttactatg aactggaaga cgggctgtac   180

accactggtc catatttctt tgccaagatc ctcggggagc ttccggagca ctgtgcctac   240

atcatcatct acgggatgcc cacctactgg ctggccaacc tgaggccagg cctccagccc   300

ttcctgctgc acttcctgct ggtgtggctg gtggtcttct gttgcaggat tatggccctg   360

gccgccgcgg ccctgctccc caccttccac atggcctcct tcttcagcaa tgccctctac   420

aactccttct acctcgccgg gggcttcatg ataaacttga gcagcctgtg gacagtgccc   480

gcgtggattt ccaaagtgtc cttcctgcgg tggtgttttg aagggctgat gaagattcag   540

ttcagcagaa gaacttataa aatgcctctc gggaacctca ccatcgcggt ctcaggagat   600

aaaatcctca gtgtcatgga ctggactcg taccctctct acgccatcta cctcatcgtc   660

attggcctca gcggtggctt catggtcctg tactacgt   698

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<210>    48
<211>    24
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    primer

<400>    48
ccctgtggaa tgtacctatg tgag                                    24


<210>    49
<211>    24
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    primer

<400>    49
gcgtaaagtg cttggaatga gggc                                    24


<210>    50
<211>    24
<212>    DNA
<213>    Artificial Sequence

<220>
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<400>    50
ccttcaacac ggacacgctc tgct                                    24


<210>    51
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<400>    51
agcttctcca ttcctgccac ctgc                                    24


<210>    52
<211>    24
<212>    DNA
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<220>
<223>    primer

<400>    52
aaggaaaagt acggcgtgga cgac                                    24
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ctaagacccc agcacctaat caca                                                        24


<210>    54
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<220>
<223>    primer

<400>    54
gagcatcatc agaaaaggga gggc                                                        24


<210>    55
<211>    24
<212>    DNA
<213>    Artificial Sequence

<220>
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<400>    55
gggtttctag ttctggggtc tgga                                                        24


<210>    56
<211>    24
<212>    DNA
<213>    Artificial Sequence

<220>
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<400>    56
aatgcaagcc gtcaggaaag tttt                                                        24


<210>    57
<211>    24
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    primer

<400>    57
cttacacttc agcttttacg gatg                                                        24
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agttgtgttt tgtgctgagc ctcc                                    24


<210>   59
<211>   24
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   primer

<400>   59
gtgcctgact ctttgggtga cttt                                    24


<210>   60
<211>   24
<212>   DNA
<213>   Artificial Sequence

<220>
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<400>   60
atagcatgga ggagtgtgaa gcgc                                    24


<210>   61
<211>   24
<212>   DNA
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<220>
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<400>   61
tttcaccacc acggcttctc tcca                                    24


<210>   62
<211>   24
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   primer

<400>   62
gctgggtgat tttgaggagg attt                                    24


<210>   63
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<211>   24
<212>   DNA
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<220>
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<400>   63
gaaaatggca cacagttggc ttac                                                   24


<210>   64
<211>   24
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<400>   64
tgtgccagca accaaatccc atgt                                                   24


<210>   65
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<212>   DNA
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<400>   65
tttctcctaa tgctatccct cccc                                                   24


<210>   66
<211>   24
<212>   DNA
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<220>
<223>   primer

<400>   66
aggagctggg aaatgttgat gata                                                   24


<210>   67
<211>   24
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   primer

<400>   67
gccatttcat cagtttatca gacc                                                   24


<210>   68
<211>   24
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<212>  DNA
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<220>
<223>  primer

<400>  68
cctgctggag agtgttttgg gctt                                      24


<210>  69
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<212>  DNA
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<220>
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<400>  69
atgtttgcga ctcctcctgc tgtg                                      24


<210>  70
<211>  24
<212>  DNA
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<220>
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<400>  70
catcctgttt gactgcagca ttgc                                      24


<210>  71
<211>  24
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  primer

<400>  71
gcaaggcagt cagttacagt ccaa                                      24


<210>  72
<211>  24
<212>  DNA
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<220>
<223>  primer

<400>  72
atattgccta tggcctgacc caga                                      24


<210>  73
<211>  24
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<213> Artificial Sequence

<220>
<223> primer

<400> 73
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<210> 74
<211> 24
<212> DNA
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<220>
<223> primer

<400> 74
gggagtagga gctatgctaa gtgt   24

<210> 75
<211> 24
<212> DNA
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<220>
<223> primer

<400> 75
tgctcatggt ctagtggaag gtca   24

<210> 76
<211> 24
<212> DNA
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<223> primer

<400> 76
ttgacagcta cagtgaagag gggc   24

<210> 77
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<220>
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<400> 77
cataagttct gtgtcccagc ctgg   24

<210> 78
<211> 24
<212> DNA
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